Manitou Springs Fire Department
Construction Checklist

This checklist contains items that are critical to the plans review process and the eventual outcome of the fire final (C.O.) inspection. This is a partial list only and should not be construed to be all inclusive of Fire, Building or City Codes. The developer and his agent are expected to become familiar with all applicable codes.

Note: Depending upon the scope of your plans, the following checklist may or may not pertain to your specific development.

Plan Review Process

- ❑ Planning Department requirements met.
- ❑ Plans approved by all intra-city agencies including Enumeration (Regional Building Department).
- ❑ Hydrant location plan to be approved prior to building permit. Water plan is required to show existing and proposed water mains, valves, fire hydrants (Including hydrant detail), storm sewers, sidewalks, street curbs, and other appropriate structures, (Fire Department and Water Division sign off on Mylar required).
- ❑ Building permit is issued by Regional Building Department.

Address/Requirements

- ❑ Address numbers of correct dimension, contrasting with background and properly posted (all buildings including single family and multi-family residential –6 inch high, 3 inch wide, ½ inch stroke: mall tenant space—4 inch high ½ inch stroke).

Hydrants (see detail sheet)

- ❑ Fire hydrants and access roadways serviceable and unobstructed prior to and during construction.
- ❑ Facing proper direction, steamer connection toward roadway.
- ❑ Hydrant caps attached.
- ❑ Proper distance from curb face (2 ½ feet).
- ❑ Hydrant stem not broken or rounded off.
- ❑ Proper grading around fire hydrant.
- ❑ Proper clearance around fire hydrant (3 feet)
- ❑ Serviceable and functional during construction (no dry hydrants).
- ❑ Mueller hydrant per Water Department approval.
- ❑ Access Easement Agreement executed as required.

Fire Lane

- Fire lane signs posted according to Fire Department specifications sheets.
- Turning radius requirements met (see detail sheet).
- Design criteria met for Fire Department turnarounds (see detail sheet).
- Minimum access roadway width of 20 feet.
- Alternative roadway materials.
- Access Easement Agreement executed as required.

Knox Box

- Knox Box mounted and keys labeled.
- Contact Fire Department for ordering.
- Any building with a monitored alarm must have a Knox box.

Fire Extinguishers: (Type of extinguisher may change with occupancy classification).

- Minimum 2A rating by underwriting agency (MSFD recommends 5lb. ABC for most occupancies).
- One Extinguisher per 3,000 square feet per floor (75 lineal feet is the maximum travel distance).
- Visible and accessible (locate in path of egress if possible).
- Fire extinguishers should be installed in plain view, in an accessible spot, near room exits that provide an escape route. Locate your extinguishers away from fire hazards (the stove, paint) (if a fire starts there your extinguisher would be out of reach). Install all extinguishes so that the top is not more then five feet above the floor.
- Current inspection tag (annual inspection required) by a licensed company.

Fire Protection Equipment (Where applicable)

- Fire department connections unobstructed.
- Water gong or outside horn and light properly located above fire department connection on street side.
- Sprinkler valves locked in “open” position or properly supervised.
- Sprinkler heads properly placed, unobstructed and all concealed spaces properly protected.
- Alarm panels properly labeled for different zones.
- Fire department valves and connections properly labeled.
- No storage or shelving with 18” of plane of the sprinkler head.

Signage

- Exit signs posted as required.
- “This door to remain unlocked during business hours” signs posted as required.
- “No smoking” signs posted

Site Maintenance During Construction

- Exits and exit corridors unobstructed prior to Fire final.
- Adequate removal of debris shall be maintained during construction.
- Compressed gas cylinders secure if applicable.
- Access roads and fire hydrants unobstructed.

Permits

- Tank abandonment/ installation permit
- Hazardous Materials Permit.
- Temporary above ground storage permit.
- Special permits.
- Blasting permits.

Special System Plan (to be approved prior to construction)

- Hood and duct extinguishing system.
- Alarm system.
- Compressed gasses.
- Hydrant location.
- Spray booth/drying ovens (El Paso Country Health Department approval also required).
- Flammable liquid storage handling or mixing room.
- Flammable liquid storage cabinets.
- Emergency lighting.
- Emergency generator.
- Outside storage of hazardous materials or flammable/combustible liquids.
- Hazardous Materials Data Sheets, chemicals lists and 704 placarding.

System Test and Written Certification are required for: (minimum 48-notification required unless otherwise noted).

- Alarm system.
- Smoke detector system.
- Fire door test (magnetic hold open, smoke detectors, smoke seals, and self closures as applicable).
- Smoke removal system test.
- Blasting (72-hour notification and permit required)
- 200 pound sprinkler pressure test.
- Flame speed certification (i.e. wall coverings, etc.).
- Tank certification, pressure tests and line tests (24-hour notification required)
- Fire hydrant flow test (one week notification required).

Inspection Request Sequence

- Development checklist completed as appropriate.
- Insure that the building permit is signed off by all city agencies prior to Fire final.
- Regional Building Department notifies Fire Prevention Division of inspection request after all other inspections are completed (Fire Final).
- Building is unlocked or prior arrangements made so the Inspector can gain entry and complete inspection.
- Building permit and approved set of construction plans are provided at the job site.
- Certificate of Occupancy issued by regional Building Department.

Developer's Notebook

The Peaks Peak Regional Building Department has recently been approved as the Authority Having Jurisdiction (AHJ) in respect to the fire code issues.

Part of this responsibility is to review development plans for compliance with the 1997 Uniform Fire Code for fire department access and firefighting water issues.

This process is coordinated with the El Paso County Planning Department. Development plans are routed through various county departments and returned to the County Planning Department with a respective series of department comments.

The Pikes Peak Regional Building Department (PPRBD) has a standard list of comments, which are utilized when evaluating these development plans.

The following is a list of standard comments with a brief explanation to clarify a requirement of the fire code.
These comments appear on plans as follows: (example Standard #3, #5, #10, #11 etc.).

With this information it is our desire that a beneficial understanding will result concerning the development plan review process conducted by the Pikes Peak Regional Building Department.

Fire Review Development- Standard Comments

Standard #1 Fire department access roads shall be engineered, established, and maintained serviceable for fire emergency purposes in accordance with the approved development plan.

Standard #2 Access roads shall be kept clear of all obstructions. Fire Lanes, when required, shall be posted after the access road is established. Street name and building address shall be posted after the access road is established.

Standard #3 Street and/or on-site fire hydrants or fire water supply, when required, shall be installed, inspected, and approved prior to commencing construction.

As a developer, engineer, contractor or owner, understand that without clear access to the construction site the fire department may not be able to respond quickly and efficiently in the event of an emergency. Access through the development or to the structure and fire water supply when required, are critical in the event of a medical or fire emergency.

Standard #4 Fire department roads shall be maintained and kept unobstructed at all times and in all types of weather.

The roadways are to be constructed and maintained to accommodate the weight of the largest fire department apparatus, with a minimum of 13 ft. 6 in. of vertical clearance through all areas.

Standard #5 Fire access roads shall extend to within 150 ft. of all portions of a structure.

The fire department access road shall extend to within 150 ft. of all portions of a structure. In most area of the county, fire departments carry 1 ¾ in. diameter fire hose in banks of 200 ft. in length. At the point of entry into a structure, from the fire access road, approximately 50 ft. of hose is remaining for entry into the structure to fight fire.

Standard #6 All portions of the structures first floor are accessible within 150 ft. of the fire access road; therefore, no fire lane designation is required for this site. This condition will be "field verified" at the time of final fire inspection.

The plan indicates that the structure is "All" accessible within the 150 ft. limit from the fire access road, and consequently emergency access exits without additional fire lane designation and signage.

Standard #7 "No parking-fire Lane" signs either erected or curb positioned, shall be posted on each side of a required fire department access roadway/street less than 28 ft. wide and on one side of required access roadway/street with a width of 28 ft. or more but less than 34 ft.

Fire lane sign requirements are based on the regulation that a fire access roadway/street be a minimum of 20 ft. wide. Fire access roadway/streets that are less then 28 ft. in width, prohibit parking on each side of the roadway/street. Fire access roadway/streets that are between 28 ft. and 34 ft. wide, prohibit parking on only one side of the roadway/street. Parking restrictions or postings are not required on fire access roadway/streets that are wider than 34 ft.

Standard #8 All required fire department access roadway/streets shall meet H-20 engineered design loading. Fire access roadway/streets shall be finished with an application of hot-mix asphalt pavement or concrete surface over an approved base material, creating an all-weather driving surface. Gravel roads may be acceptable if the road meets or exceeds H-20 loading specification.

Fire trucks carrying equipment and water are quite heavy; consequently the design and specifications of required fire access roadway/streets shall be engineered, stamped and signed by a qualified certified engineer.

Standard #9 Throughout the development and/or site 28 ft. wide roadway/streets shall be maintained for fire department access. An area where back-to-back parking is provided 24 ft. wide fire access roadway/streets is acceptable. Access roadway/streets utilized "exclusively" for fire department use 20 ft. wide is acceptable. Fire access roadway/streets serving two single-family residences or one residential duplex 12 ft. wide is acceptable.

Standard #10 Roadway or street grades shall not exceed 10% or a grade approved by the fire department.

The guideline regulation is a 10% roadway or street grade. Locations such as hillside areas, is a 10% grade is sometimes not achievable; consequently a 12% grade is acceptable.

Standard #11 Dead-end access roadways or streets in excess of 200 ft. shall be provided with an approved fire apparatus turnaround.

Back out a fire truck under normal circumstances or in an emergency situation has safety limitations and considerations for the crew as well as response time.

Standard #12 Cul-de-sacs shall not exceed 500 ft. in length. Turnaround provisions shall meet design criteria as specified.

Currently, a cul-de-sac less then 500 ft. in length is designed as an 84 ft. flow-to-flow diameter bulb. For cul-de-sacs over 500 ft. in length a 96 ft. flow-to-flow diameter bulb is required. For cul-de-sacs over 600 ft. in length, in addition to the larger bulb, an intermediate turnaround is required at 500 ft. intervals.

Standard #13 Roadways/streets turning radii shall be adequate for fire department vehicle access.

Fire vehicle turning distance shall be considered in the design of new roadway/streets for both public and private access.

Standard #14 Two access/exit ways should be provided into a development and/or a building site for emergency response and public exit.

This safety consideration enhances fire and medical emergency response as well as emergency public egress. Single access approval shall be made on a case-by-case basis, considering the following:

- **Density of the proposed development.**
- **Length of dead-ends.**
- **Width of access roadway/streets.**
- **Firefighting water supply.**
- **Structure construction type.**
- **Size of structures.**
- **Occupancy.**
- **Landscaping/groundcover.**

Standard #15 Landscaping shall not hamper fire access or suppression activities.

Ensure that landscaping be maintained away fire access roadways, streets and water supply, such as low-hanging tree branches, bushes or vegetation that obstruct fire equipment or personnel.

Standard #16 The developer, contractor, and/or property owner shall provide the required fire flow for fire suppression and protection to the site, when required by the fire department.

Without an adequate supply of water, available at strategic locations, the fire department will face an "extreme" tactical challenge involving fire.

Standard # 17 A "Knox-box" key vault, padlock, or switch is required to be installed at any building with a monitored alarm, or gate to gain access.

The "Knox Company" key vault, padlock, or electronic switch, is utilized by the fire department to quickly gain access into a structure or site, without causing property damage to doors or gates. The Knox system is a high security function maintained by the fire department. If the structure has fire sprinkler and/or fire alarm system monitored off-site, a Knox box will be required. A highly secure site may also require a Knox component.

Standard #18 Residing in a wild land/wildfire interface area (hillside) involves increased fire risks. Wildfire considerations may apply.

Requirements may include fire resistant exteriors and roofing, fire sprinklers and/or fire alarm system, tree and vegetation reduction or removal, ect. These measures are an effort to reduce the spread of fire, and "possibly" save your home.

“NO PARKING FIRE LANE” Sign Specifications

The NO PARKING FIRE LANE sign shall be 12” X 18”, Red lettering on white background. These signs shall be mounted so as the bottom of the sign is at least seven
(7 feet) above any pedestrian surface. There shall be a minimum clearance of one foot from edge of sign to street face of curb. The fire lane sign shall be placed at beginning of the restriction, at the end of the restriction and at least every 100 feet within the restricted area. Appropriate arrow will indicate the direction of the restriction.

The NO PARKING FIRE LANE sign should be set at an angle of not less than 30 degrees and no more than 45 degrees with the lane of traffic flow to be visible to approaching traffic.

“NO PARKING FIRE LANE” sign must be posted by the developer on both sides of access roadways less then 28 feet wide and on one side of access roadways 28 feet wide but less than 34 feet wide. Contact Manitou Springs Fire Department for sign specifications.

Private Main Extensions

Water Statement:

The undersigned owner/developer agrees that the installation of these proposed water facilities will be made in accordance with Water Division specifications and shall provide a minimum of five feet six inches (5'6") and a maximum of six feet (6'0") of cover over the water main or mains. The undersigned understanding that all water mains, fire hydrants and appurtenances as indicated on this water installation plan shall remain the property of the owner and shall be maintained by the owner.

Signed: _____. Date: _____.
Owner/Developer

DBA: _____.

Address: _____.

_____.

All hydrants shall be installed according to the City of Manitou Springs Water Division Specifications.

The number of fire hydrants and hydrant locations as shown on this water installation plan are correct and adequate to satisfy the fire protection requirements as specified by the City of Manitou Springs Fire Department.

Signed: _____. Date: _____.
MSFD Fire Prevention Division

Water Installation Corrosion Control Requirements:

Not Required:
Required described as follows: _____
_____.

Water Plan Approval:

Signed: _____. Date: _____.
Manitou Springs Water Division

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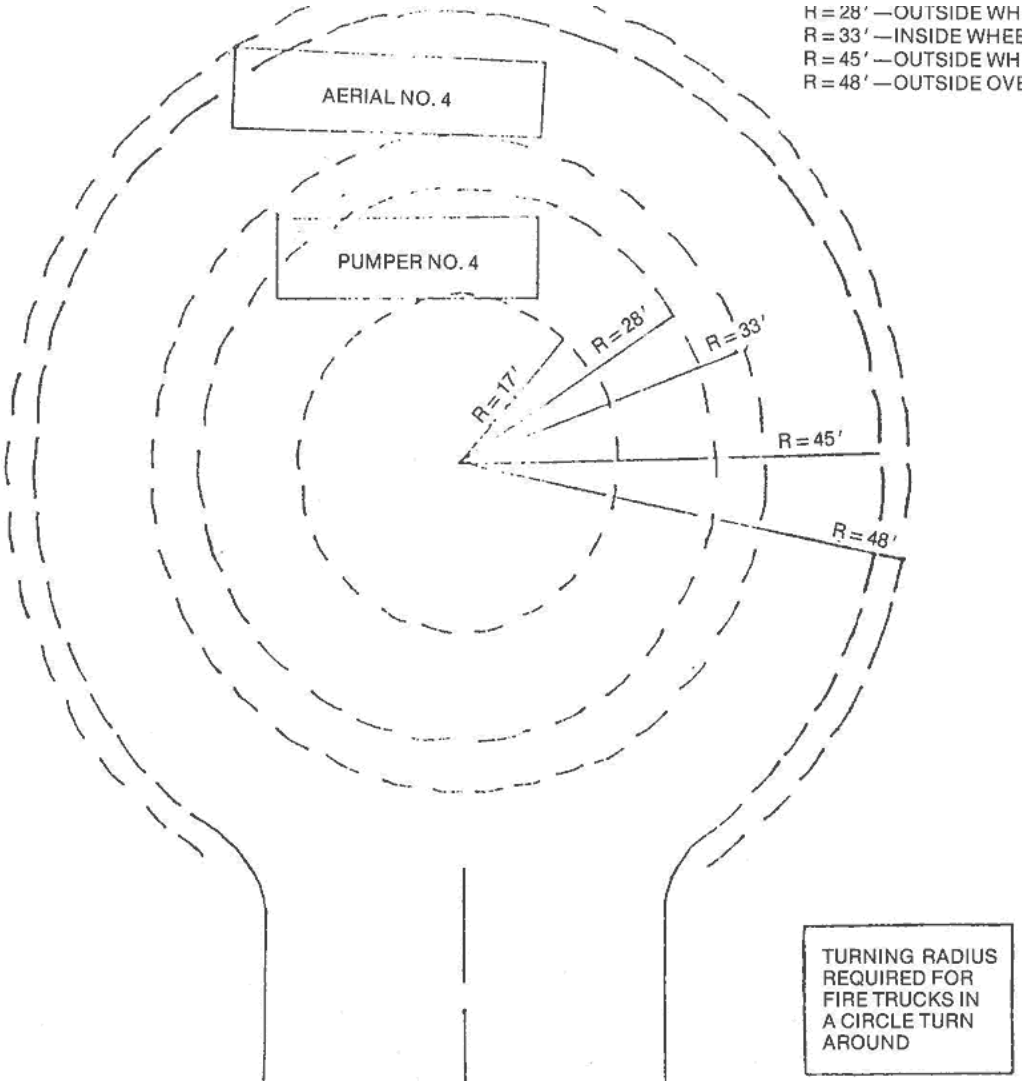
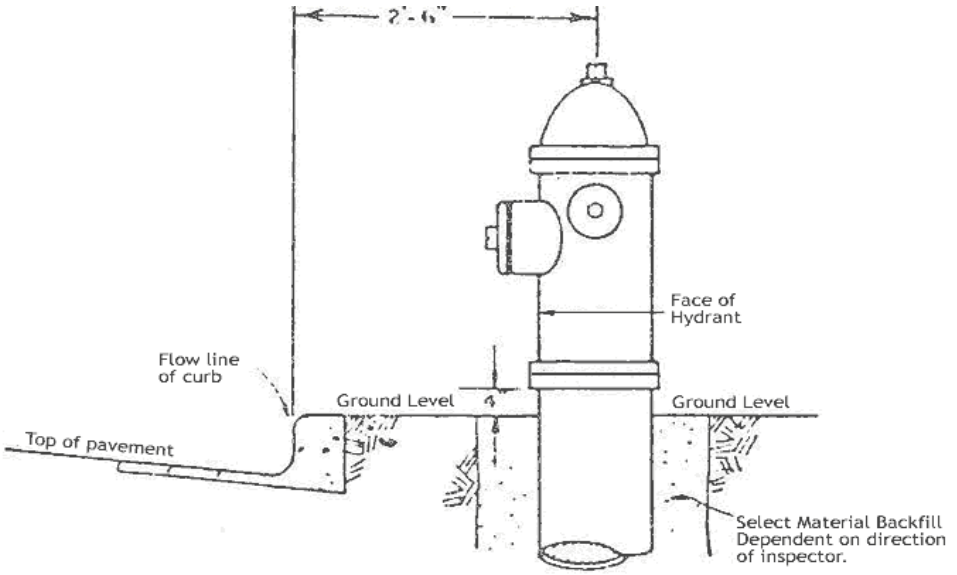
Manitou Springs Water Division


NO
PARKING
FIRE
LANE


8"
P
9/10"
FIRE
2"
LANE
2"



TURNING RADIUS REQUIRED FOR FIRE TRUCKS IN A CIRCLE TURN AROUND

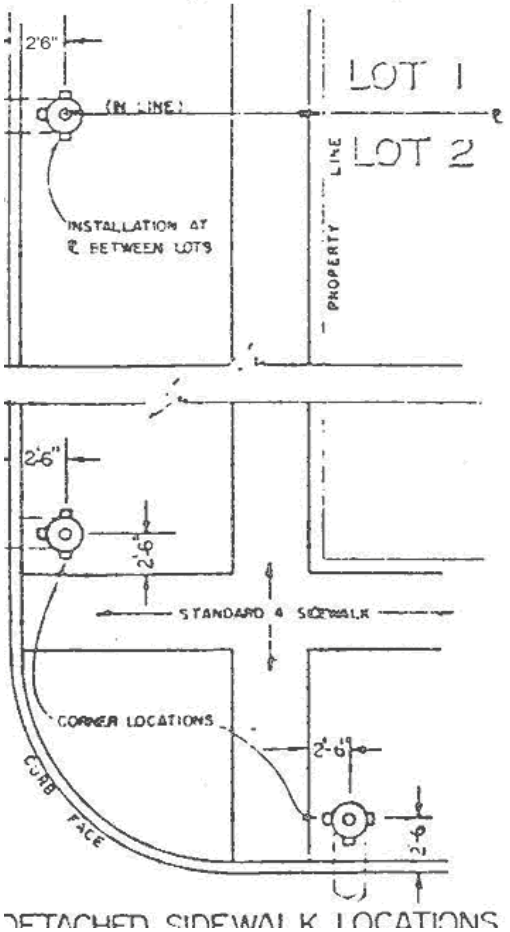


General Notes:

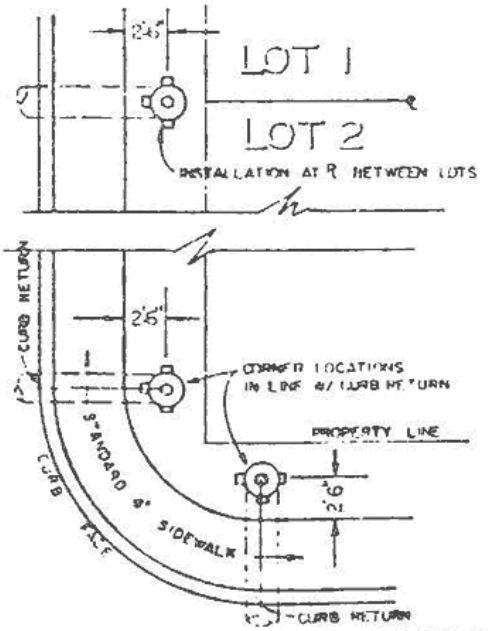
1. **Hydrant nozzles shall be positioned at right angles to curb. If no curb or sidewalk exists, nozzles shall be placed at right angles to street or alley.**

2. **Hydrants will be placed a minimum of 5.0 feet from any utility or drainage structure.**

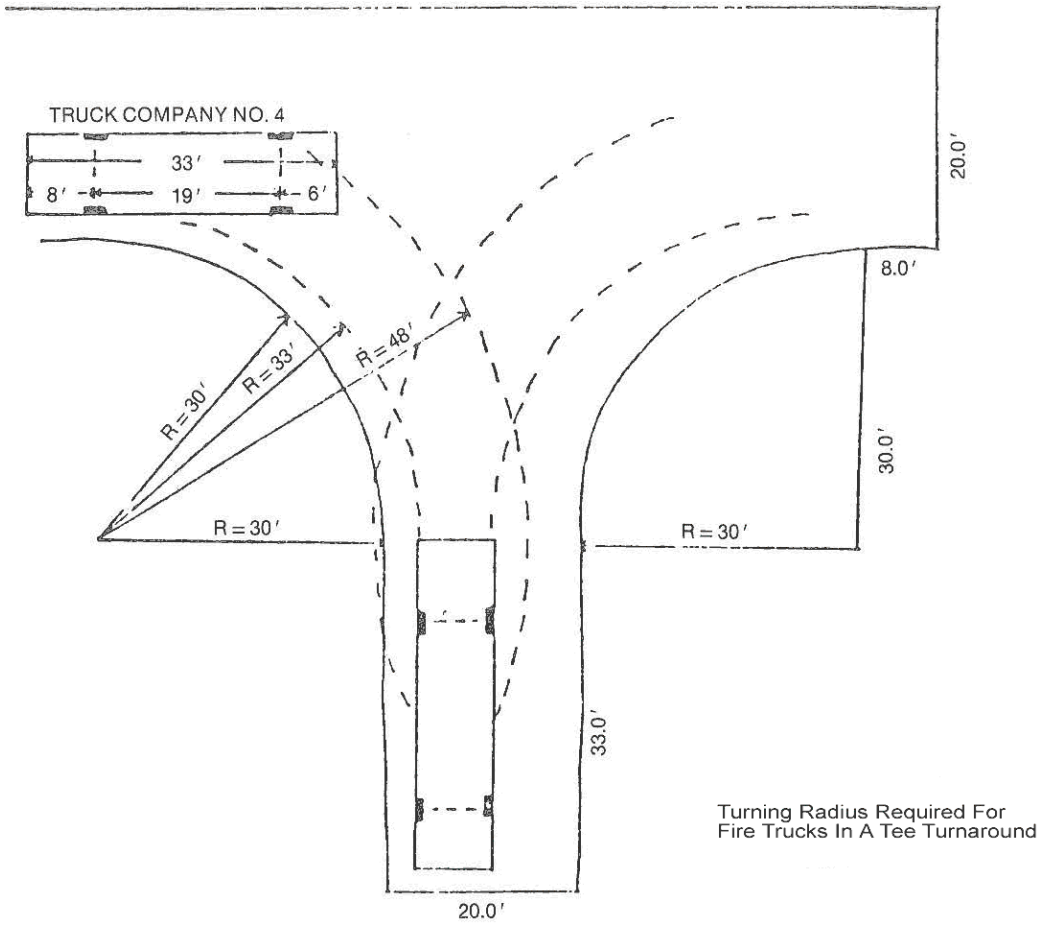
3. **Any hydrant being installed with conditions other than those mentioned and/or detailed below will require signed approval from the City of Manitou Springs Water Division and Fire Department.**



DETACHED SIDEWALK LOCATIONS



ATTACHED SIDEWALK LOCATIC



Turning Radius Required For
Fire Trucks In A Tee Turnaround